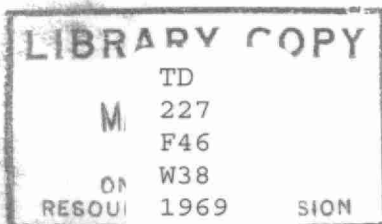


# 1969

**OPERATING  
SUMMARY**

## ***FENELON FALLS***

***water  
treatment  
plant***



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ONTARIO WATER RESOURCES COMMISSION

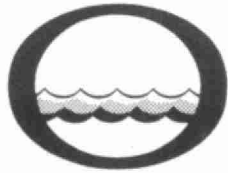
Division of Plant Operations

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*Water management in Ontario*

Ontario  
Water Resources  
Commission


135 St. Clair Ave. W.  
Toronto 195  
Ontario

The operating efficiency and financial status of the water treatment facilities operated for you in 1969 are presented in the following pages.

The regional operations engineer's comments and the statistical data will assist you in gauging the plant's level of performance. A new flow chart and up-to-date design data are also provided.

Various divisions and sections within the Commission have co-operated in providing what we trust is an accurate and concise annual operating summary.

  
D. S. Caverly,  
General Manager.

  
D. A. McTavish, P. Eng.,  
Director,  
Division of Plant Operations.

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**FENELON FALLS**  
**water treatment plant**

operated for

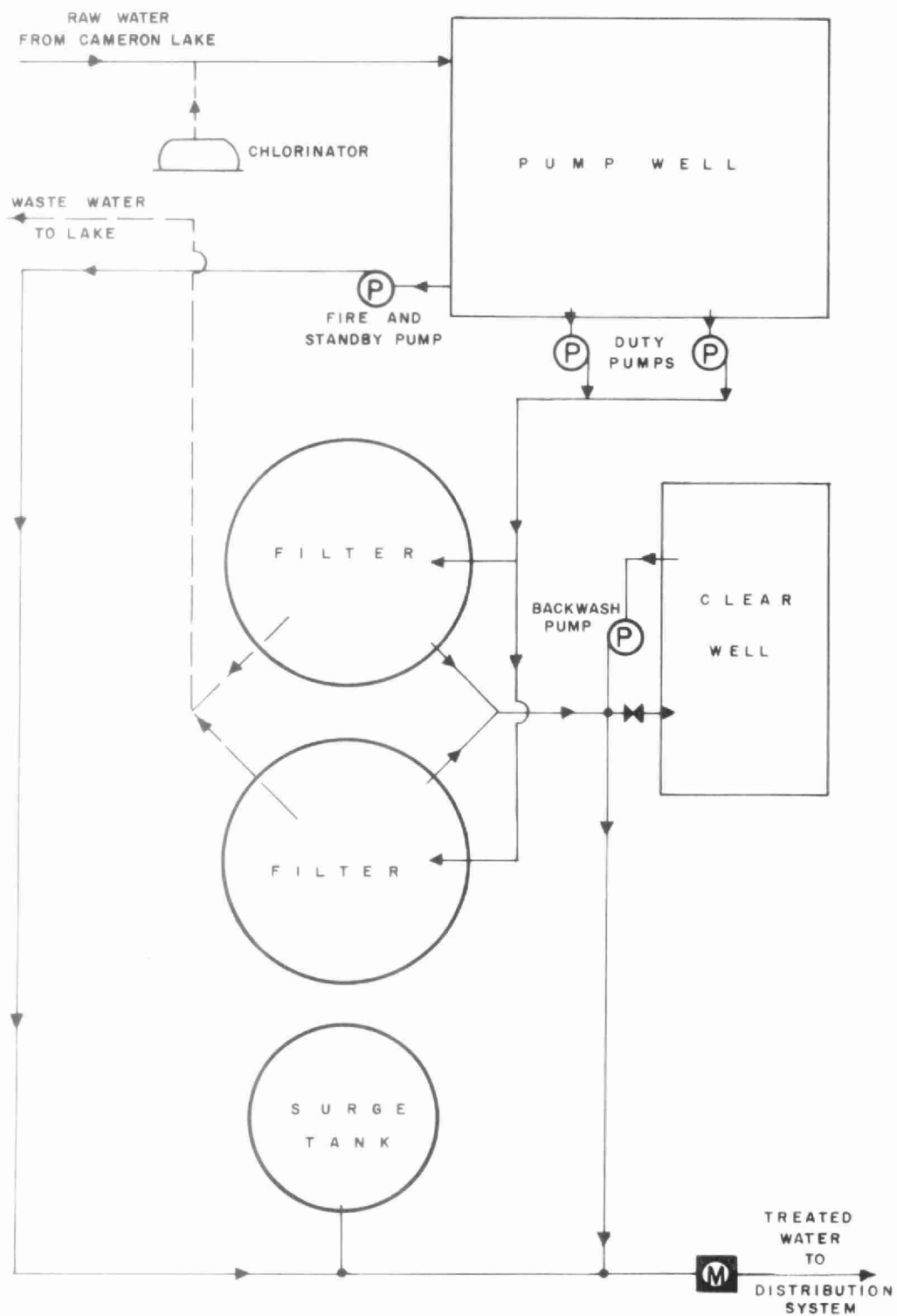
THE VILLAGE OF FENELON FALLS

by the

ONTARIO WATER RESOURCES COMMISSION

**1969 ANNUAL OPERATING SUMMARY**

# FENELON FALLS WATER TREATMENT PLANT



## DESIGN DATA

PROJECT NO. 6-0060-57

DESIGN FLOW

180,000 gpd

DESIGN POPULATION

1,300

### INTAKE

18" dia corrugated metal, 710 ft,  
from Cameron Lake.  
Max flow 835 gpm (1.2 mgd)

### WET WELL

Size: 15' x 15' x 10.8' max depth  
(14,000 gal)

### CHLORINATION - in wet well

- Fischer & Porter C-1420  
automatic proportioning chlorinator

### DUTY PUMPS

Type: Allis-Chalmers double suction  
centrifugal pumps, Model SJH  
Capacity: Two 170 gpm @ 175' tdh  
(490,000 gpd total)

### STANDBY and FIRE PUMP

One Babcock-Wilcox & Goldie McCulloch  
single-stage, double suction centrifugal  
pump, driven by a Wisconsin engine,  
model VR4D

### FILTERS

Type: Infilco rapid sand pressure  
filters  
Capacity: Two 126 gpm (360,000 gpd  
total)  
Filter Rate: 2.5 gpm per sq ft @ 75 psi

### CLEARWELL

Size: 15' x 5' x 12.3' max depth  
(5,800 gal)

### BACKWASH PUMP

Type: Canada Pump single-section  
centrifugal pump  
Capacity: 510 gpm @ 40' tdh

### SURGE TANK

One 2000 gal tank with a Brunnes air  
compressor, Model H30



# '69 **REVIEW**

## EXPENDITURES

The operating cost for the year was \$11,194.37. This was an increase of \$2,122.35 from 1968 and was due mainly to higher payroll costs. A total of 47.827 million gallons was treated at an average cost of 23 cents per thousand gallons. These costs do not include power, which is paid for by the municipality.

## PROCESS DATA

The average daily plant flow for the year of 131,000 gallons was approximately the same as in 1968. A significant reduction in average daily flow during the summer months was attributed to restrictions on lawn-watering. During July, August and September, the average daily flows were 164,000, 172,000 and 177,000 gallons respectively.

From the probability of flow curve, it can be seen that the design flow of 180,000 gallons per day was exceeded 12 percent of the time, compared to 22 percent in 1968.

The chemical analyses show that the quality of the treated water was satisfactory. All the chemical properties except colour are within the desirable standards. The removal of excess colour by chemical treatment has been recommended by the consulting firm of Totten, Sims & Hubicki.

A total of 1,370 lbs. of chlorine was used to achieve a residual of 0.5 milligrams per litre in the treated water. The prechlorination dosage average of 2.9 mg/l was an increase from the average of 2.1 in 1968. This indicates a deterioration in the quality of the raw water.

Bacteriological samples taken at the plant and at various locations in the distribution system indicated that adequate disinfection was achieved during 1969. The one sample taken in August which indicated coliform presence can be attributed to contamination during the sampling or testing.

## **CONCLUSIONS**

The operation produced a safe and reasonably good quality of water which could be improved by additional treatment.

The restriction on lawn-watering has eased the high demand during the summer months. However, the plant design flow was exceeded 12 percent of the time.

The recommendations of the consultant's report to improve the storage, pumping and treatment facilities should be acted upon.

## PROJECT COSTS

NET CAPITAL COST (Final)	\$303,660.14
DEDUCT - Payments from Municipality	<u>2,531.00</u>
Long Term Debt to OWRC	<u>\$301,129.14</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1969	\$ <u>52,072.53</u>
Net Operating	\$ 11,194.37
Debt Retirement	6,077.00
Reserve	1,475.35
Interest Charged	<u>16,858.68</u>
TOTAL	\$ <u>35,605.40</u>

### RESERVE ACCOUNT

Balance @ January 1, 1969	\$ 13,807.46
Deposited by Municipality	1,475.35
Interest Earned	<u>817.84</u>
	\$ 16,100.65
Less Expenditures	<u>-</u>
Balance @ December 31, 1969	\$ <u>16,100.65</u>

## 1969 OPERATING COSTS

• PAYROLL	77 %
• FUEL	0 %
• POWER	0 %
• CHEMICALS	1 %
• GENERAL SUPPLIES	6 %
• EQUIPMENT	5 %
• REPAIRS & MAINTENANCE	3 %
• SUNDRY	6 %
• TRAVEL	2 %

## TOTAL ANNUAL COST

NET OPERATING	32 %
DEBT RETIREMENT	17 %
INTEREST	47 %
RESERVE FUND	4 %

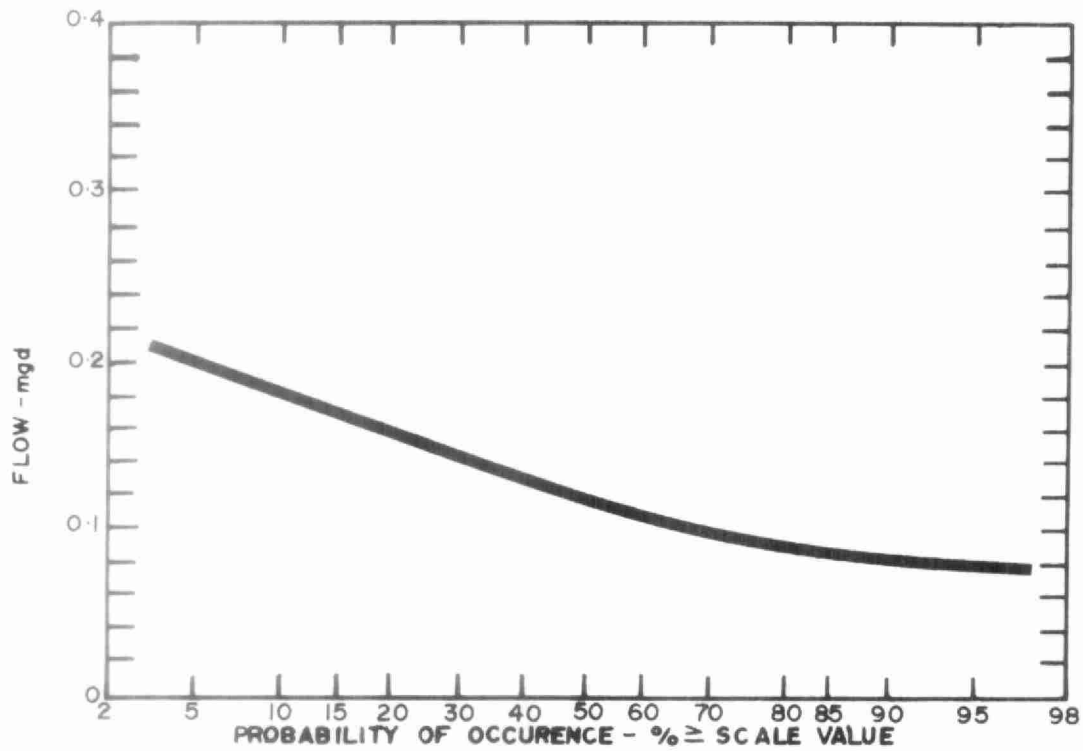
## Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER THOUSAND GALLONS
1965	40.728	\$ 7,884.37	\$0.19
1966	34.360	7,241.30	0.16
1967	44.771	7,527.22	0.17
1968	48.775	9,072.02	0.19
1969	47.827	11,194.37	0.23

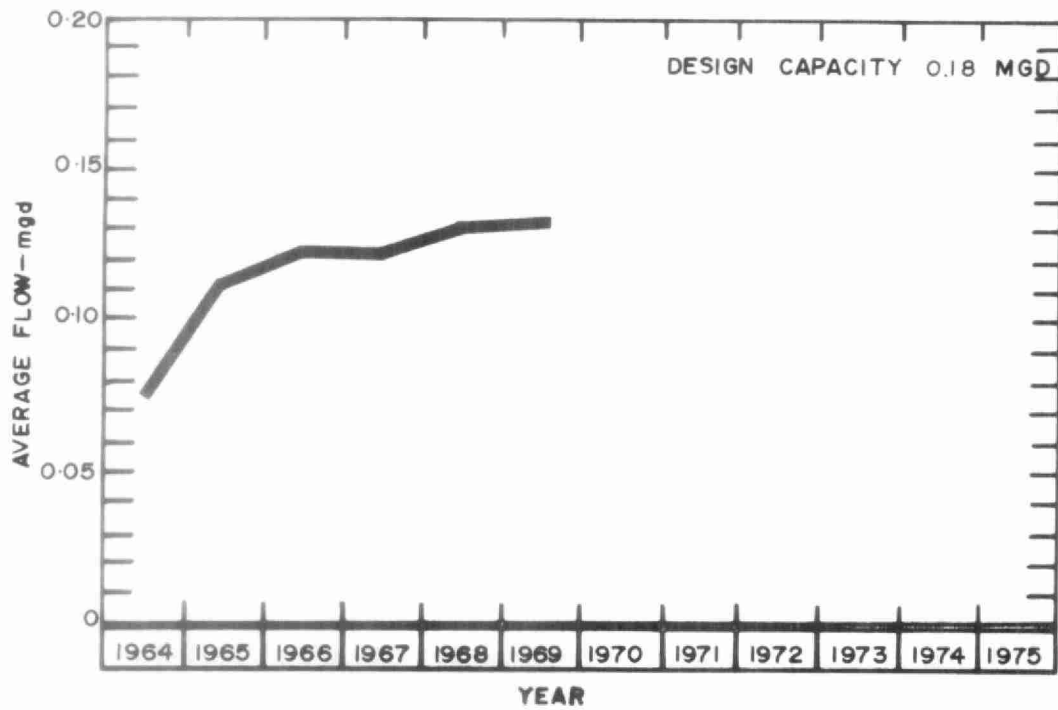
## Monthly Operating Costs

MONTH	TOTAL	PAYROLL	CASUAL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	SUNDRY	TRAVEL
JAN	1280.77	825.45	308.73				17.55			21.54	107.50
FEB	1169.08	551.30	198.69				15.60	383.17		20.32	
MAR	631.98	509.30					70.60	.35		51.73	
APRIL	1070.71	643.43					47.42		245.29	134.57	
MAY	650.36	559.27					19.78			71.31	
JUNE	620.78	507.01					35.35		15.43	62.99	
JULY	1091.58	573.25	334.85				22.80	124.42		16.26	
AUG	1342.54	750.45	363.63			93.75	111.20			23.51	
SEPT	931.18	556.69	227.76				106.45			40.28	
OCT	750.48	504.69	90.00				17.33		23.86	49.32	65.00
NOV	749.11	618.77	14.00							95.34	21.00
DEC	924.20	527.46	2.03				174.96		91.35	128.40	-
TOTAL	11192.77	7127.35	1539.69	—	—	93.75	639.04	507.94	375.93	715.57	193.50

**PROCESS DATA**



## **FL O W S**



## PLANT FLOWS

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal
JAN	3.101	.100	.131	.062
FEB	2.731	.098	.111	.083
MAR	3.036	.098	.111	.083
APR	2.569	.086	.106	.076
MAY	3.006	.097	.137	.064
JUNE	3.572	.119	.177	.088
JULY	5.088	.164	.224	.121
AUG	5.341	.172	.252	.092
SEPT	5.307	.177	.293	.110
OCT	4.969	.160	1.99	.065
NOV	4.640	.155	.184	.138
DEC	4.467	.144	.158	.126
TOTAL	47.827	-	-	-
AVERAGE	3.986	0.131	-	-



## CHLORINATION and DISINFECTION

MONTH	COLIFORM				CHLORINATION	
	RAW WATER		TREATED WATER		CHLORINE USED pounds	CHLORINE DOSAGE mg/l
	NUMBER OF SAMPLES TAKEN	AVERAGE DENSITY No./100 ml	NUMBER OF SAMPLES TAKEN	NUMBER WITH COLIFORMS > 0/100ml		
JAN	2	80	6	0	72	2.3
FEB	2	46	10	0	68	2.5
MAR	2	3	12	0	82	2.7
APR	1	0	3	0	83	3.2
MAY	2	18	10	9	116	3.9
JUNE	2	17	10	0	124	3.5
JULY	2	38	14	0	181	2.4
AUG	2	400	11	1	170	3.4
SEP	2	100	13	0	136	3.2
OCT	1	1400	11	0	118	2.4
NOV	2	3	18	0	108	2.3
DEC	1	1	3	0	112	2.5
TOTAL	-	-	-	-	1370	-
AVERAGE	2	181	10	0	114	2.9

## WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVG	MAX	MIN	NUMBER OF SAMPLES	AVG	MAX	MIN	
HARDNESS mg/l $\text{CaCO}_3$	3	64	66	60	2	68	70	65	80 - 100
ALKALINITY mg/l $\text{CaCO}_3$	3	64	96	42	2	49	50	47	30 - 100
IRON mg/l Fe	3	.18	.30	.10	2	.13	.15	.10	< 0.3
COLOUR apparent colour units	2	25	30	20	2	18	20	15	< 5
CHLORIDE mg/l $\text{Cl}^-$	3	3	4	3	2	6	6	5	< 250

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